

REMARKS

In response to a Final Office Action dated January 9, 2004, the Applicant is filing a Request for Continued Examination pursuant to 37 C.F.R. § 1.114. At the time of the Final Office Action, claims 1-35 were pending. In this Preliminary Amendment, new claims 36-45 are added. Accordingly, claims 1-45 are currently pending.

In the Office Action, claims 1, 3-10, 12-21, 23, and 25-35 were rejected under 35 U.S.C. § 102(e) as being anticipated by Johnson et al. (U.S. Patent No. 6,519,580). Additionally, claims 2, 11, 22, 24, and 28 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Johnson et al. in view of Agrawal et al. (U.S. Patent No. 6,233,575). Each of these rejections is addressed in detail below.

Rejections Under 35 U.S.C. § 102

As set forth above, the Examiner rejected claims 1, 3-10, 12-21, 23, and 25-35 under 35 U.S.C. § 102(e) as being anticipated by Johnson et al. Specifically, the examiner stated:

Claims 1, 3- 10, 12- 21, 23, 25- 35 are rejected under 35 U.S.C 102(e) as been anticipated by U.S. Patent 6,519,580 issued to David E. Johnson et al (hereinafter "Johnson").

Regarding claim 1, Johnson teaches a method categorization of an item comprising:

providing a plurality of categories organized in a hierarchy of categories (see column 4, lines 62 - 65);

providing a plurality of categorizers corresponding to the plurality of categories (see column 2, lines 39 -40);

featurizing the item to create a list of item features (see column 4, lines 41 - 45);

using the list of item features in a categorizer system including the plurality of categorizers for determining a plurality of levels of goodness (see column 6, lines 1 16);

using one of the plurality of levels of goodness for invoking an additional categorizer of the plurality of categorizers as required (see column 14, lines 24 - 65);

categorizing the item in the categorizer system in the plurality of categories based on

the respective plurality of levels of goodness (see column 17, lines 59 - 67); and

returning the item categorized (see column 18, lines 15 - 21).

Regarding claim 3, Johnson teaches using a categorizer system knowledge base for determining the level of goodness for a category with the list of item features(see column 6, lines 51 - 65).

Regarding claim 4, Johnson teaches listing the plurality of categories and the respective levels of goodness on a list; and categorizing from the list (see column 6, lines 63 - 67).

Regarding claim 5, Johnson teaches returning one category for the item among the plurality of categories selected from a group consisting of the one category with the best level of goodness for all the plurality of categories and with the best level of goodness for which determining is completed where all of the plurality of categories are not compared (see column 18, lines 15 - 21).

Regarding claim 6, Johnson teaches returning a plurality of categories for the item among the plurality of categories returns a plurality of categories selected from a group consisting of categories up to a fixed number of the plurality of categories, categories having more than a fixed level of goodness, categories fulfilling a user specified preference, categories not from a categorizer, and categories which are a combination thereof (see column 18, lines 15--21).

Regarding claim 7, Johnson teaches returning the category for a plurality of items establishes a categorizer system knowledge base for a topic hierarchy (see column 18, lines 15 - 21).

Regarding claim 8, Johnson teaches listing a plurality of labels for each of the plurality of categories (see column 1, lines 24 - 27); and

training a categorizer system trainer using a plurality of items having known categories and the plurality of labels to provide a categorizer system knowledge base (see column 6, lines 39 - 42).

Regarding claim 9, Johnson teaches providing a categorizer system knowledge base (see column 2, lines 39 - 40);

using a plurality of items with known categories to learn knowledge in the categorizer system knowledge base (see column 1, lines 24 - 27).

Regarding claim 10, Johnson teaches providing a categorizer system knowledge base (see column 2, lines 39 - 40);

providing a plurality of categorizers, each using knowledge in a categorizer system knowledge base and the list of item features to compute a degree of goodness for a plurality of categories, independent of other categories, each using a subset of item features to compute a degree of goodness for a plurality of categories, independent of other categorizers, and each subset independent of subsets used by other categorizers (see column 2, lines 39 - 64); and

providing a mechanism to resolve the levels of goodness for a plurality of categories resulting from multiple categorizers into a combined level of goodness for a plurality of categories (see column 2, lines 1 - 10 and lines 65 - 67).

Claim 12 is essentially the same as claim I except that it sets forth the claimed invention as a method for categorization of a document rather than a method for categorization of an item and therefore rejected for the same reasons as applied hereinabove.

Regarding claim 13, Johnson teaches determining the plurality of levels of goodness includes using a process selected from a group consisting of Naive Bayes, quantitative decision-tree classifiers such as C4.5, Bayesian networks, rule-based multi-class classifiers that output a degree of goodness, conditional probability statements, simple heuristics, and a combination thereof (see column 1, lines 40-43 and column 18, lines 42-45).

Claim 14 is essentially the same as claim 3 except that it sets forth the claimed invention as a method for categorization of a document rather than a method for categorization of an item and therefore rejected for the same reasons as applied hereinabove.

Claim 15 is essentially the same as claim 4 except that it sets forth the claimed invention as a method for categorization of a document rather than a method for categorization of an item and therefore rejected for the same reasons as applied hereinabove.

Claim 16 is essentially the same as claim 5 except that it sets forth the claimed invention as a method for categorization of a document rather than a method for categorization of an item and therefore rejected for the same reasons as applied hereinabove.

Regarding claim 17, Johnson teaches returning a plurality of categories for the document among the plurality of categories returns a plurality of categories selected from a group consisting of categories up to a fixed number of the plurality of categories, categories having more than a fixed level of goodness, categories fulfilling a user specified preference, categories not from a categorizer, and categories which are a combination thereof (see 17, lines 61 -67 and column 18, lines 15 -21).

Claim 18 is essentially the same as claim 7 except that it sets forth the claimed invention as a method for categorization of a document rather than a method for categorization of an item and therefore rejected for the same reasons as applied hereinabove.

Claim 19 is essentially the same as claim 8 except that it sets forth the claimed invention as a method for categorization of a document rather than a method for categorization of an item and therefore rejected for the same reasons as applied hereinabove.

Claim 20 is essentially the same as claim 9 except that it sets forth the claimed invention as a method for categorization of a document rather than a method for categorization of an item and therefore rejected for the same reasons as applied hereinabove.

Claim 21 is essentially the same as claim 10 except that it sets forth the claimed invention as a method for categorization of a document rather than a method for categorization of an item and therefore rejected for the same reasons as applied hereinabove.

Claim 23 is essentially the same as claim I except that it sets forth the claimed invention as a system for categorization of an item rather than a method for categorization of an item and therefore rejected for the same reasons as applied hereinabove.

Claim 25 is essentially the same as claim 3 except that it sets forth the claimed invention as a system for categorization of an item rather than a method for categorization of an item and therefore rejected for the same reasons as applied hereinabove.

Regarding claim 26, Johnson teaches a categorizer system trainer trained using a plurality of items having known categories and the plurality of labels to provide a categorizer system knowledge base (see column 3, lines 24 - 28 and column 6, lines 39-42).

Regarding claim 27, Johnson teaches a system for categorization of an item comprising:

- a categorizer system knowledge base having a plurality of categories organized in a hierarchy of categories and having respective lists of category features (see column 4, lines 62 - 65 and column 6, lines 63 - 67);

- a featurizer for featurizing the item to create a list of item features (see column 2, lines 39 - 40); and

- a categorizer system connected to the categorization system knowledge base including:

 - a plurality of categorizers having one of the plurality of categories, the plurality of categorizers for using the list of item features with the lists of category features to respectively determine a plurality, of levels of goodness, the plurality of categorizers categorizing the item in the categorizer system in the plurality of categories based on the respective plurality of levels of goodness (see column 16, lines 1 - 16 and column 17, lines 59 - 67),

 - a mechanism for using one of the plurality of levels of goodness for invoking an additional categorizer of the plurality of categorizers as required (see column 6, lines 63 - 67); and

a return for returning the item categorized (see column 18, lines 15 - 21).

Regarding claim 29, Johnson teaches the categorizer system knowledge base determines the lists of category features (see column 6, lines 51 - 65).

Regarding claim 30, Johnson teaches the plurality of categorizers include a list mechanism for listing the plurality of categories and the respective levels of goodness (see column 6, lines 63 - 67); and

the plurality of categorizers categorizes from the list mechanism (see column 6, lines 51 - 65).

Regarding claim 31, Johnson teaches the return returns one category for the item among the plurality of categories selected from a group consisting of the one category with the best level of goodness for all the plurality of categories and with the best level of goodness for which determining is completed where all of the plurality of categories are not compared (see column 18, lines 15 - 21).

Regarding claim 32, Johnson teaches the return returns a plurality of categories for the item among the plurality of categories returns a plurality of categories selected from a group consisting of categories up to a fixed number of the plurality of categories, categories having more than a fixed level of goodness, categories fulfilling a user specified preference, categories not from a categorizer, and categories which are a combination thereof (see column 118, lines 15 - 21).

Regarding claim 33, Johnson teaches the return returns the category for a plurality of items to the categorizer system knowledge base for building a topic hierarchy (see column 18, lines 15 - 21).

Regarding claim 34, Johnson teaches a further listing mechanism for listing a plurality of labels for each of the plurality of categories (see column 1, lines 24 - 27); and

a categorizer system trainer trained using a plurality of items having known categories and the plurality of labels to provide the categorizer system knowledge base (see column 6, lines 39 - 42).

Regarding claim 35, Johnson teaches a system for categorization of an item comprising:

a categorizer system knowledge base having a plurality of categories having respective lists of category features (see column 4, lines 62 - 65 and column 6, lines 63 -67);

a featurizer for featurizing the item to create a list of item features (see column 2, lines 39 - 40); and

a categorizer system connected to the categorizer system knowledge base including:

a plurality of categorizers having the plurality of categories, the plurality of categorizers for determining the list of item features with the lists of category features to respectively determine a plurality of levels of goodness, the plurality of categorizers categorizing the item in the categorizer system in the plurality of categories based on the respective plurality of levels of goodness (see column 16, lines 1 - 16 and column 17, lines 59 -67),

a mechanism for using one of the plurality of levels of goodness for invoking an additional categorizer of the plurality of categorizers as required a listing mechanism for listing the plurality of categories and the respective levels of goodness on a list (see column 6, lines 63 - 67), and

a return for returning a category for the item from the list (see column 18, lines 15-21).

Office Action, pages 5-14.

The Applicant respectfully traverses these rejections. Anticipation under section 102 can be found only if a single reference shows exactly what is claimed. *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 227 U.S.P.Q. 773 (Fed. Cir. 1985). For a prior art reference to anticipate under section 102, every element of the claimed invention must be identically shown in a single reference. *In re Bond*, 910 F.2d 831, 15 U.S.P.Q.2d 1566 (Fed. Cir. 1990). In order to maintain a proper rejection under section 102, a single reference must teach each and every element or step of the rejected claim, else the reference falls under section 103. *Atlas Powder v. E.I. du Pont*, 750 F.2d 1569 (Fed. Cir. 1984). Accordingly, the Applicant needs only point to a single element not found in the cited reference to demonstrate that the

cited reference fails to anticipate the claimed subject matter. The prior art reference also must show the *identical* invention “*in as complete detail as contained in the ... claim*” to support a *prima facie* case of anticipation. *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 U.S.P.Q. 2d 1913, 1920 (Fed. Cir. 1989).

In the present case, the Johnson reference does not anticipate the Applicant’s claims under Section 102 because every element of the claimed invention is not identically shown in a single reference. Specifically independent claim 1, as amended, requires “using the list of item features in a categorizer system” and “using one of the plurality of levels of goodness for invoking *an additional categorizer* of the plurality of categorizers.” Emphasis added. Independent claim 12 recites “using the list of document features in a categorizer system” and “using one of the plurality of levels of goodness for invoking *an additional categorizer* of the plurality of categorizers as required.” Emphasis added. New independent claim 36 recites “determining degrees of correspondence between features of a category and each of the list of item features” and “using the degrees of correspondence of at least one of the item features to invoke *an additional categorizer*.” Emphasis added.

Independent apparatus claim 23 recites “a categorizer system including the plurality of categorizers using the list of item features in for determining a plurality of levels of goodness, the categorizer system for categorizing the item in the plurality of categories based on the respective plurality of levels of goodness, the categorizer system for using one of the plurality of levels of goodness for invoking *an additional categorizer*.” Emphasis added. Independent claim 27 recites “a plurality of categorizers having one of the plurality of categories” and “a mechanism for using one of the plurality of levels of goodness for invoking *an additional categorizer* of the plurality of categorizers.” Emphasis added. Independent claim 35 recites

“a plurality of categorizers having the plurality of categories” and “a mechanism for using one of the plurality of levels of goodness for invoking *an additional categorizer* of the plurality of categorizers as required.” Emphasis added. Thus, all independent claims set forth at least two distinct levels of categorization.

In contrast to the above, Johnson merely discloses a process of categorization in which a decision tree is converted into a symbology that is used for categorization instead of the decision tree. The symbology is a *substitute* for the decision tree, not a second level of categorization based on the output of the decision tree. For example, Johnson concerns “converting decision trees into simplified logically equivalent rule sets, instead of employing a text categorization system based solely on decision trees.” Col. 14, lines 25-27. Johnson also states that “automated construction from each decision tree of a simplified symbolic rule set that is logically equivalent overall to the decision tree, and which is to be used for categorization instead of the decision tree.” Abstract. Thus, Johnson clearly does not contemplate a second level of categorization or *an additional categorizer*, as recited in the present claims.

For at least the reasons set forth above, the Applicant respectfully submits that independent claims 1, 12, 23, 27, and 35 (and dependent claims 3-10, 13-21, 24-26, and 28-34) are not anticipated by the Johnson et al. reference. Accordingly, the Applicant respectfully requests withdrawal of the Examiner’s rejection of claims 1, 3-10, 12-21, 23, and 25-35 under Section 102 based on Johnson. Additionally, the Applicant respectfully asserts new claims 36-45 are in condition for allowance.

Rejections under 35 U.S.C. § 103

As set forth above, the Examiner rejected claims 2, 11, 22, 24, and 28 under 35 U.S.C. § 103(a) as being unpatentable over Johnson in view of Agrawal. Specifically, the Examiner stated:

Regarding claim 2, Johnson does not explicitly teach using the list of item features determines the plurality of levels of goodness using a process to quantify the plurality of levels of goodness, to prioritize the plurality of levels of goodness, and to resolve two levels of goodness into a third level of goodness.

Agrawal teaches using the list of item features determines the plurality of levels of goodness using a process to quantify the plurality of levels of goodness, to prioritize the plurality of levels of goodness,, and to resolve two levels of goodness into a third level of goodness (see Fig.2; column 9, lines 58 - 67; column 11, lines 64 - 67 and column 12, lines 1 - 11).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine teaching of Johnson with the teaching of Agrawal wherein levels are the hierarchical structure of the items. Resolving the levels is breaking the hierarchical levels of nodes and leaves. The motivation is that the hierarchical levels make searching of items or document easier.

Regarding to claim 11, Johnson teaches a method for categorization of an item comprising:

providing a plurality of categories organized in a hierarchy of categories and having respective lists of category' features using a categorizer system knowledge base for determining the lists of category features (see column 6, lines 63 - 67);

providing a plurality of categorizers corresponding to one of the plurality of categories (see column 6, lines 1 - 3 and lines 39 - 42);

featurizing the item to create a list of item features (see column 2, lines 39 - 40);

using one of the plurality or levels of goodness for invoking an additional categorizer of the plurality of categorizers as required (see column 14, lines 24 - 65);

categorizing the item in the categorizer system in the plurality of categories based on the respective plurality of levels of goodness (see column 17, lines 59 - 67);

listing the plurality of categories and the respective levels of goodness on a list (see column 1, lines 24 - 27 and ,column 6, lines 63 - 67); and

returning a category for the; item from the list (see column 6, lines 51 - 65 and column 18, lines 15 - 21).

Johnson does not explicitly teach using the list of item features in a categorizer system including the plurality of categorizers with the lists of category features to respectively determine a plurality of levels of goodness, the plurality of levels of goodness determined using a process to quantify the plurality of levels of goodness, to prioritize the plurality of levels of goodness, and to resolve two levels of goodness into a third level of goodness.

Agrawal teaches using the list of item features in a categorizer system including the plurality of categorizers with the lists of category features to respectively determine a plurality of levels of goodness, the plurality of levels of goodness determined using a process to quantify the plurality of levels of goodness, to prioritize the plurality of levels of goodness, and to resolve two levels of goodness into a third level of goodness (see column 11, lines 64 - 67 and column 12, lines 1 - 11).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine teaching of Johnson with the teaching of Agrawal wherein levels are the hierarchical structure of the items. Resolving the levels is breaking the hierarchical levels of nodes and leaves. The motivation is that the hierarchical levels make searching of items or document easier.

Claim 22 is essentially the same as claim 11 except that it sets forth the claimed invention as a method for categorization of a document rather than a method for categorization of an item and therefore rejected for the same reasons as applied hereinabove.

Claim 24 is essentially the same as claim 2 except that it sets forth the claimed invention as a system rather than a method and therefore rejected for the same reasons as applied hereinabove.

Regarding claim 28, Johnson does not explicitly teach the plurality of categorizers determine the plurality of levels of goodness using a process to quantify the plurality of levels of goodness, to prioritize the plurality of levels of goodness, and to resolve two levels of goodness into a third level of goodness.

Agrawal teaches the plurality of categorizers determine the plurality of levels of goodness using a process to quantify the plurality of levels of goodness, to prioritize the plurality of levels of goodness, and to resolve two levels of goodness into a third level of goodness (see column 11, lines 64 -67 and column 12, lines 1 - 11).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine teaching of Johnson with the teaching of Agrawal wherein levels are the hierarchical structure of the items. Resolving the levels is breaking the hierarchical levels of nodes and leaves. The motivation is that the hierarchical levels make searching of items or document easier.

The Applicant respectfully traverses these rejections. The burden of establishing a *prima facie* case of obviousness falls on the Examiner. *Ex parte Wolters and Kuypers*, 214 U.S.P.Q. 735 (P.T.O. Bd. App. 1979). Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention absent some teaching or suggestion supporting the combination. *ACS Hospital Systems, Inc. v. Montefiore Hospital*, 732 F.2d 1572, 1577, 221 U.S.P.Q. 929, 933 (Fed. Cir. 1984). Accordingly, to establish a *prima facie* case, the Examiner must not only show that the combination includes *all* of the claimed elements, but also a convincing line of reason as to why one of ordinary skill in the art would have found the claimed invention to have been obvious in light of the teachings of the references. *Ex parte Clapp*, 227 U.S.P.Q. 972 (Bd. Pat. App. & Inter. 1985). When prior art references require a selected combination to render obvious a subsequent invention, there

must be some reason for the combination other than the hindsight gained from the invention itself, i.e., something in the prior art as a whole must suggest the desirability, and thus the obviousness, of making the combination. *Uniroyal Inc. v. Rudkin-Wiley Corp.*, 837 F.2d 1044, 5 U.S.P.Q.2d 1434 (Fed. Cir. 1988).

Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention absent some teaching or suggestion supporting the combination. *ACS Hospital Systems, Inc. v. Montefiore Hospital*, 732 F.2d 1572, 1577, 221 U.S.P.Q. 929, 933 (Fed. Cir. 1984). One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988).

In the present case, Johnson and Agrawal taken alone or in combination do not include all of the presently claimed elements. For example, Johnson fails to disclose at least the elements set forth in the discussion of the Examiner's section 102 rejections. Specifically, all independent claims recite a second level of categorization after an initial categorization has been performed. Agrawal does not obviate the deficiencies of Johnson because, like Johnson, Agrawal fails to show a second level of categorization or an additional categorizer. Agrawal is not even alleged by the Examiner to disclose a second level of categorization. Further, even if Agrawal could obviate the deficiencies of Johnson, obviousness has not been established because a teaching or suggestion supporting the combination of Johnson and Agrawal has not been shown.

For at least the reasons set forth above, the Applicant respectfully submits that claims 2, 11, 22, 24, and 28 are patentable over the Johnson reference in view of Agrawal.

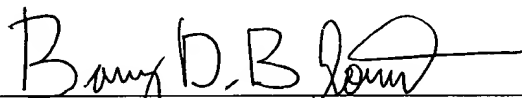
Accordingly, the Applicant respectfully request withdrawal of the Examiner's rejection of claims 2, 11, 22, 24, and 28 under Section 103 based on Johnson in view of Agrawal. Additionally, the Applicant believes new claims 36-45 are in condition for allowance.

Conclusion

In view of the amendments and remarks set forth above, the Applicant respectfully requests that the Examiner withdraw all rejections of the Applicant's pending claims. Furthermore, the Applicant asserts that an indication of the allowability of claims 1-45 is appropriate. If the Examiner believes that a telephonic interview will help speed this application toward issuance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,

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Barry D. Blount
Reg. No. 35,069
FLETCHER YODER
(281) 970-4545

CORRESPONDENCE ADDRESS:

Intellectual Property Administration
Legal Department, M/S 35
HEWLETT-PACKARD COMPANY
P.O. Box 272400
Fort Collins, CO 80527-2400